

Friday, March 11, 2016 12:57:25 PM

Page 1

[illegible]

MAY 13 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 142734

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142734

Page 2

Item ID: D412-698-042

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Hinge Panel Automatic Door Opener RH OEM Aluminum Door

Stop ***NS2***Start Date: 4/27/2016 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 5/9/2016 Req'd Qty: 1.00 ***1***

Customer:

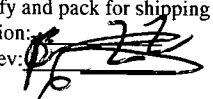
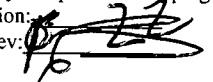
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Pick Kit	0.00							
130						27			
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D412-698-042 Location:  PPP rev: 								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00							
Quality Control									

MAY 13 2016

MAY 13 2016

MAY 13 2016

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Friday, March 11, 2016 12:57:28 PM

Page 1

Work Order ID: 142734

142734

Parent Item: D412-698-042

D412-698-042

Parent Item Name: Hinge Panel Automatic Door Opener RH OEM Aluminum Door

Start Date: 4/27/2016

Required Date: 5/9/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 11.08.18 new issue DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3552-21 *D3552-21* Door Prop		Manufactured	No			110	Each	8.0000	1	1			
DAS 27 9-89 <u>Location</u> ST364 128809 129422 73948 <u>Loc Qty</u> 8 2 4 2 <u>Loc Code</u> 													
D3622-1 *D3622-1* Ball Stud		Manufactured	No			110	Each	32.0000	1	1			
DAS 27 9-89 <u>Location</u> ST046 131523 ST051A 131624 <u>Loc Qty</u> 12 12 20 20 <u>Loc Code</u> 													
D4330-042 *D4330-042* Airframe Bracket Assembly, RH		Manufactured	No			110	Each	3.0000	1	1			
DAS 27 9-89 <u>Location</u> ST093 119283 129827 <u>Loc Qty</u> 3 1 2 <u>Loc Code</u> 													

DAS
5
9-89
DAS
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DAS
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MAY 08 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Picklist Print

Friday, March 11, 2016 12:57:28 PM

Page 2

Work Order ID: 142734

142734

Parent Item: D412-698-042

D412-698-042

Parent Item Name: Hinge Panel Automatic Door Opener RH OEM Aluminum Door

Start Date: 4/27/2016

Required Date: 5/9/2016

Start Qty: 1.00

Required Qty: 1.00

D4330-3 Manufactured No

110 Each 1.0000 1 1

D4330-3

Door Bracket

DAS
27
9-89

Location

Loc Qty

Loc Code

ST093

1

101442

1

MS21042L5 Purchased No

110 Each 449.0000 1 1

MS21042L5

Nut

DAS
27
9-89

Location

Loc Qty

Loc Code

GA

146

m127813

146

ST303

303

m134055

303

NAS1149D0563J Purchased No

110 Each 1,069.000 1 1

NAS1149D0563.J

Washer

DAS
27
9-89

Location

Loc Qty

Loc Code

GA

307

m125807

12

m133769

295

ST263

659

m133990

159

m134257

500

ST269

103

m128257

103

**

DAS

6

9-89

DAS

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9-89

MAY 13 2016

B142768

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DAS

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9-89

MAY 08 2016

134497

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			

Root Cause			FAULT CATEGORY		
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐			
Misidentified ☐	Past Due ☐				

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS
IIN-D412-698 REV. E OR LATER APPROVED REVISION

REF. TCCA STC: SH92-43
REF. FAA STC: SR01446NY
REF. EASA STC: EASA.IM.R.S.00709
REF. BRASIL STC: 2010S10-09

1.0 PURPOSE:

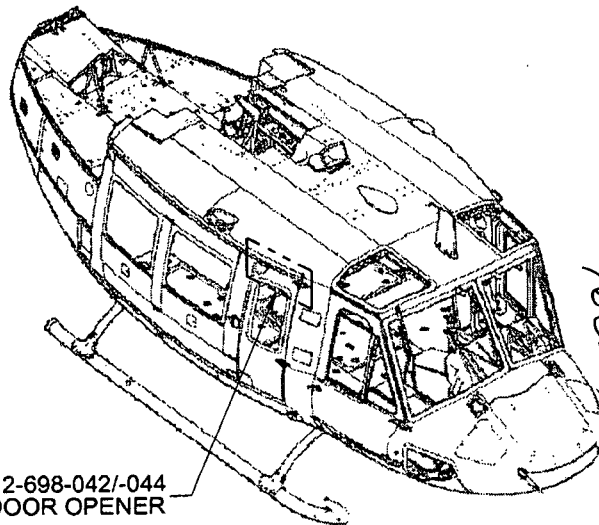
The purpose of this DSI is to add the optional automatic door opener kit for both the OEM aluminum (Bell P/N 205-031-423-005/-157/-006/-158), OEM composite (Bell P/N 412-030-029-101/-102), and Dart Spacedoor™ (Dart P/N D412-694-03/-04) hinge panel doors.

2.0 DESCRIPTION:

The Dart D412-698-XXX Hinge Panel Automatic Door Opener Kit permits the installation of a gas spring between the hinge panel doors (or "quarter" doors) and the cabin ceiling to prevent the doors from closing while the occupants enter or exit the aircraft.

The **D412-698-041 Hinge Panel Automatic Door Opener Kit** installs on the LH side of the aircraft and the **D412-698-042 Hinge Panel Automatic Door Opener Kit** installs on the RH side of the aircraft. These kits are designed to mount onto the OEM aluminum door (Bell P/N 205-031-423-005/-157/-006/-158).

The **D412-698-043 Hinge Panel Automatic Door Opener Kit** installs on the LH side of the aircraft and the **D412-698-044 Hinge Panel Automatic Door Opener Kit** installs on the RH side of the aircraft. These kits are designed to mount onto the OEM composite (Bell P/N 412-030-029-101/-102) and Dart Spacedoor™ (Dart P/N D412-694-03/-04).



LOCATION OF D412-698-042/-044
AUTOMATIC DOOR OPENER

NO. 1603-14
WORK ORDER
SUBJECT TO AGREEMENT
WITHOUT NOTICE
UNCONTROLLED COPY
ENGINEERING
RETURN TO
S. OF COPY

FIGURE 1: LOCATION OF HINGE PANEL AUTOMATIC DOOR OPENER KITS
(RH Installation Shown, LH Opposite)

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 12.08.30
CERT. NO.: SH92-43
ISSUE NO.: 5

C	D412-698-043/-044 NOW COMPATIBLE FOR INSTALLATION ON OEM COMPOSITE DOORS	MB	12.08.29
B	ADDED NOTE TO TRIM EXISTING TRIM/CEILING PANELS: ITEMS 11/12 OF SECTIONS 3.0/4.0 (SHT 2/4); UPDATED FIGURE 3 ACCORDINGLY. REF: PAR11-150.	MB	12.01.17
A	NEW ISSUE	DC	11.04.26
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>BC</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED	A.P.	DRAWING NO.	REV. C
MFG. APPR.	N/A	DSI 9548	SHEET 1 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	HINGE DOOR OPENER KIT	NTS
DATE	12.08.29	COPYRIGHT © 2011 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

3.0 INSTALLATION OF D412-698-041/-042 HINGE PANEL AUTOMATIC DOOR OPENER (OEM ALUMINUM DOOR):

NOTE: The following instructions are for a typical RH side installation. For installation on the LH side, substitute D4330-041 for D4330-042.

1. Remove any ceiling or trim panels located on the RH foward cabin ceiling. Remove existing door spring Bell p/n 205-030-303-101 and associated hardware.
2. Using Figures 2 and 3 and dimensions shown as reference, locate D4330-042 Airframe Bracket Assembly, RH on the intersection of the existing aircraft rivet lines. The angled part of D4330-042 Airframe Bracket Assembly, RH is required to pick up on a minimum of 3 rivets. The bracket may be hand formed as necessary to improve fit with the contoured ceiling.
3. Mark the location of D4330-3 Door Bracket on the Hinge Panel Door as shown in Figure 4.
4. Verify that the D3552-21 Gas Spring will close properly (0.25" travel before it is fully retracted) when the door is closed. Adjust the position of the D4330-042 Airframe Bracket Assembly, RH if required to maintain rivet edge distance.
5. Verify that the D3552-21 Gas Spring will open the door to the desired position. Ensure the Gas Spring does not interfere with the door or airframe. Adjust location of D4330-3 Door Bracket if required.
NOTE: When the door is fully open, it should be approximately perpendicular to the aircraft.
6. Remove the 205-031-423-005/-157/-006/-158 aluminum door from the aircraft per the Aircraft Maintenance Manual.
7. Remove any existing rivets where the D4330-042 Airframe Bracket Assembly, RH and D4330-3 Door Bracket will be installed.
8. Locate D4330-042 Airframe Bracket Assembly, RH on the aircraft ceiling per Figure 3. Transfer drill #30 ($\phi 0.129$ ") holes from the ceiling to D4330-042. Deburr holes.
9. Locate D4330-3 Door Bracket on the hinge panel door per Figure 4. Using Figure 5 as a guide for the approximate locations of the mounting holes, transfer drill 3x #30 ($\phi 0.129$ ") holes from the door skin to D4330-3 and drill 2x additional holes at locations shown in Figure 5. Deburr holes.
10. Apply a thin layer of Proseal 890 (or equivalent) to faying surface of the D4330-042/-3 brackets. Install the D4330-042 Airframe Bracket Assembly, RH using CR3213-4 rivets as shown in Figure 3. Install D4330-3 Door Bracket using CR3213-4 rivets as shown in Figure 4.
11. Pre-install the ceiling or trim panels that were removed in Step 1 and transfer mark contour of D4330-041 or -042 as shown in Figure 3 (SHT 6). Remove ceiling or trim panels and perform cutout to clear D4330-041 or -042. Touch-up finish of ceiling or trim panels cutout area in accordance with aircraft maintenance manual and re-install any ceiling or trim panels.
12. Install a D3622-1 Ball Stud on the D4330-3 Door Bracket using hardware specified in Figure 4.
13. Re-install modified door on aircraft per Aircraft Maintenance Manual.
14. Install D3552-21 Gas Spring onto the D3622-1 Ball Studs per Figure 2.
15. Verify proper gas spring and door operation.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 12.08.30
CERT. NO.: SH92-43
ISSUE NO.: 5

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. C
MFG. APPR.	N/A	DSI 9548	SHEET 2 OF 9
APPROVED		TITLE	SCALE
DE APPR.		HINGE DOOR OPENER KIT	NTS
DATE	12.08.29	COPYRIGHT © 2011 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

4.0 INSTALLATION OF D412-698-043/-044 HINGE PANEL AUTOMATIC DOOR OPENER (OEM COMPOSITE):

NOTE: The following instructions are for a typical RH side installation. For installation on the LH side, substitute D4330-041 for D4330-042.

1. Remove any ceiling or trim panels located on the RH forward cabin ceiling. Remove existing door spring Bell p/n 205-030-303-101 and associated hardware.
2. Using Figures 2 and 3 and dimensions shown as reference, locate D4330-042 Airframe Bracket Assembly, RH on the intersection of the existing aircraft rivet lines. The angled part of D4330-042 Airframe Bracket Assembly, RH is required to pick up on a minimum of 3 rivets. The bracket may be hand formed as necessary to improve fit with the contoured ceiling.
3. Mark the location of D4330-3 Door Bracket on the hinge panel door as shown in Figure 6.
4. Verify that the D3552-21 Gas Spring will close properly (0.25" travel before it is fully retracted) when the door is closed. Adjust the position of the D4330-042 Airframe Bracket Assembly, RH if required to maintain rivet edge distance.
5. Verify that the D3552-21 Gas Spring will open the door to the desired position. Ensure the Gas Spring does not interfere with the door or airframe. Adjust location of D4330-3 Door Bracket if required.
NOTE: When the door is fully open, it should be approximately perpendicular to the aircraft.
6. Remove the 412-030-029-101/-102 composite door from the aircraft per the Aircraft Maintenance Manual.
7. Remove any existing rivets, if any, where the D4330-042 Airframe Bracket Assembly, RH will be installed.
8. Locate D4330-042 Airframe Bracket Assembly, RH on the aircraft ceiling per Figure 3. Transfer drill #30 ($\phi 0.129$ ") holes from the ceiling to D4330-042. Deburr holes.
9. Locate D4330-3 Door Bracket on the hinge panel door per Figure 6. Using Figure 7 as a guide for the approximate locations of the mounting holes, drill 3x #7 ($\phi 0.201$ ") holes in D4330-3 and the inner door skin. Enlarge holes in hinge panel door inner skin to 9/16" ($\phi 0.5625$ ").
10. Install the 3x 80-005-2-8 inserts per Paragraph 3.2.12 of the BHT-MED-SRM at the locations drilled in Step 9 in the hinge panel door using Hysol EA934NA.
11. Apply a thin layer of Proseal 890 (or equivalent) to faying surface of the D4330-042/-3 brackets. Install the D4330-042 Airframe Bracket Assembly, RH using CR3213-4 rivets as shown in Figure 3. Install D4330-3 Door Bracket using hardware as shown in Figure 6.
12. Pre-install the ceiling or trim panels that were removed in Step 1 and transfer mark contour of D4330-041 or -042 as shown in Figure 3 (SHT 6). Remove ceiling or trim panels and perform cutout to clear D4330-041 or -042. Touch-up finish of ceiling or trim panels cutout area in accordance with aircraft maintenance manual and re-install any ceiling or trim panels.
13. Install a D3622-1 Ball Stud on the D4330-3 Door Bracket using hardware specified in Figure 6.
14. Re-install modified door on aircraft per Aircraft Maintenance Manual.
15. Install D3552-21 Gas Spring onto the D3622-1 Ball Studs per Figure 2.
16. Verify proper gas spring and door operation.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 12.08.30
CERT. NO.: SH92-43
ISSUE NO.: 5

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. C
MFG. APPR.	N/A	DSI 9548	SHEET 3 OF 9
APPROVED		TITLE	SCALE
DE APPR.		HINGE DOOR OPENER KIT	NTS
DATE	12.08.29	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

5.0 INSTALLATION OF D412-698-043/-044 HINGE PANEL AUTOMATIC DOOR OPENER (DART SPACEDOORS™):

NOTE: The following instructions are for a typical RH side installation. For installation on the LH side, substitute D4330-041 for D4330-042.

1. Remove any ceiling or trim panels located on the RH forward cabin ceiling. Remove existing door spring Dart p/n D3113-1 and associated hardware.
2. Using Figures 2 and 3 and dimensions shown as reference, locate D4330-042 Airframe Bracket Assembly, RH on the intersection of the existing aircraft rivet lines. The angled part of D4330-042 Airframe Bracket Assembly, RH is required to pick up on a minimum of 3 rivets. The bracket may be hand formed as necessary to improve fit with the contoured ceiling.
3. Mark the location of D4330-3 Door Bracket on the Spacedoor™ as shown in Figure 6.
4. Verify that the D3552-21 Gas Spring will close properly (0.25" travel before it is fully retracted) when the door is closed. Adjust the position of the D4330-042 Airframe Bracket Assembly, RH if required to maintain rivet edge distance.
5. Verify that the D3552-21 Gas Spring will open the door to the desired position. Ensure the Gas Spring does not interfere with the door or airframe. Adjust location of D4330-3 Door Bracket if required.
NOTE: When the door is fully open, it should be approximately perpendicular to the aircraft.
6. Remove the D412-694-03/-04 Door Assembly from the aircraft per ICA-D412-694 Section 52.1.
7. Remove any existing rivets where the D4330-042 Airframe Bracket Assembly, RH will be installed.
8. Locate D4330-042 Airframe Bracket Assembly, RH on the aircraft ceiling per Figure 3. Transfer drill #30 ($\phi 0.129"$) holes from the ceiling to D4330-042. Deburr holes.
9. Locate D4330-3 Door Bracket on the Spacedoor™ per Figure 6. Using Figure 7 as a guide for the approximate locations of the mounting holes, drill 3x #7 ($\phi 0.201"$) holes in D4330-3 and the inner door skin. Enlarge holes in Spacedoor™ inner skin to 9/16" ($\phi 0.5625"$).
10. Install the 3x 80-005-2-8 inserts per Paragraph 3.2.12 of the BHT-MED-SRM at the locations drilled in Step 9 in the Spacedoor™ using Hysol EA934NA.
11. Apply a thin layer of Proseal 890 (or equivalent) to facing surface of the D4330-042/-3 brackets. Install the D4330-042 Airframe Bracket Assembly, RH using CR3213-4 rivets as shown in Figure 3. Install D4330-3 Door Bracket using hardware as shown in Figure 6.
12. Pre-install the ceiling or trim panels that were removed in Step 1 and transfer mark contour of D4330-041 or -042 as shown in Figure 3 (SHT 6). Remove ceiling or trim panels and perform cutout to clear D4330-041 or -042. Touch-up finish of ceiling or trim panels cutout area in accordance with aircraft maintenance manual and re-install any ceiling or trim panels.
13. Install a D3622-1 Ball Stud on the D4330-3 Door Bracket using hardware specified in Figure 6.
14. Re-install modified door on aircraft per ICA-D412-694 Section 52.2.
15. Install D3552-21 Gas Spring onto the D3622-1 Ball Studs per Figure 2.
16. Verify proper gas spring and door operation.

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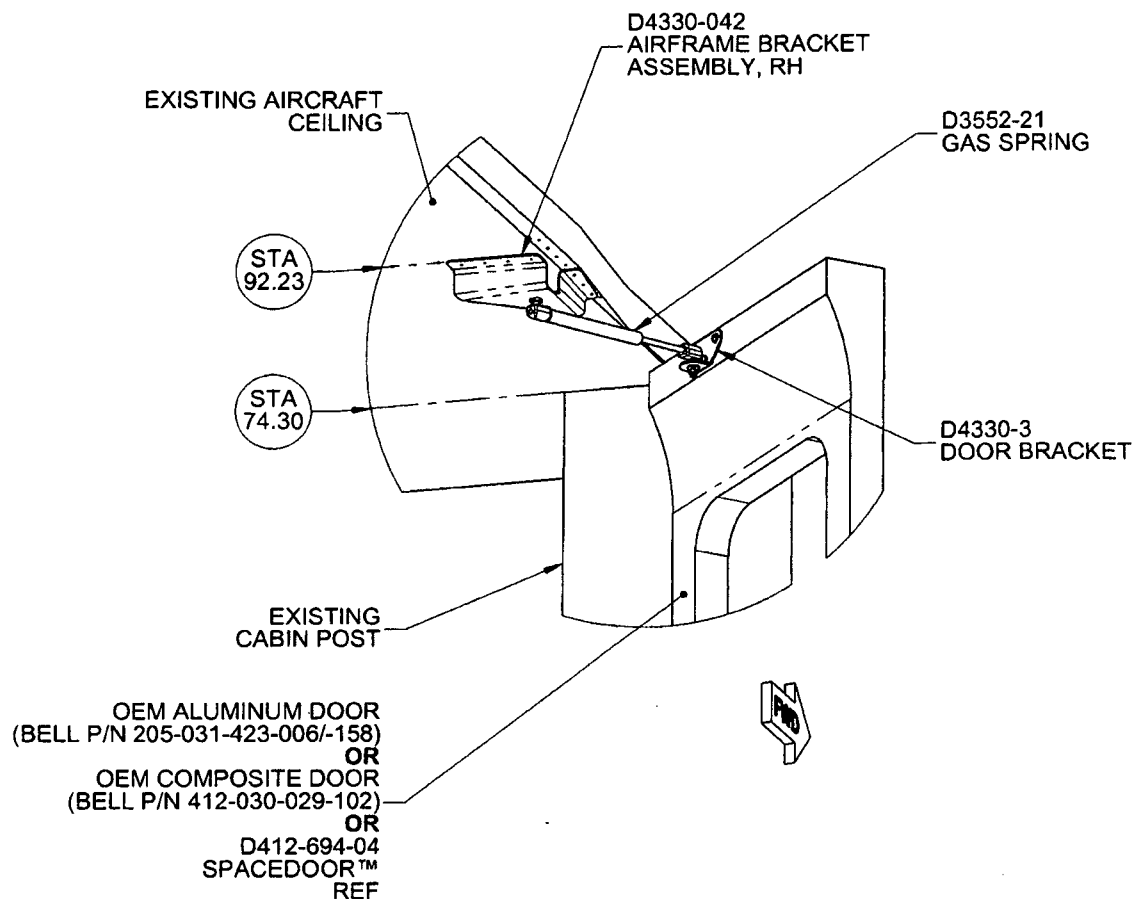


FIGURE 2: INSTALLATION DETAIL
(RH Installation Shown, LH Opposite)

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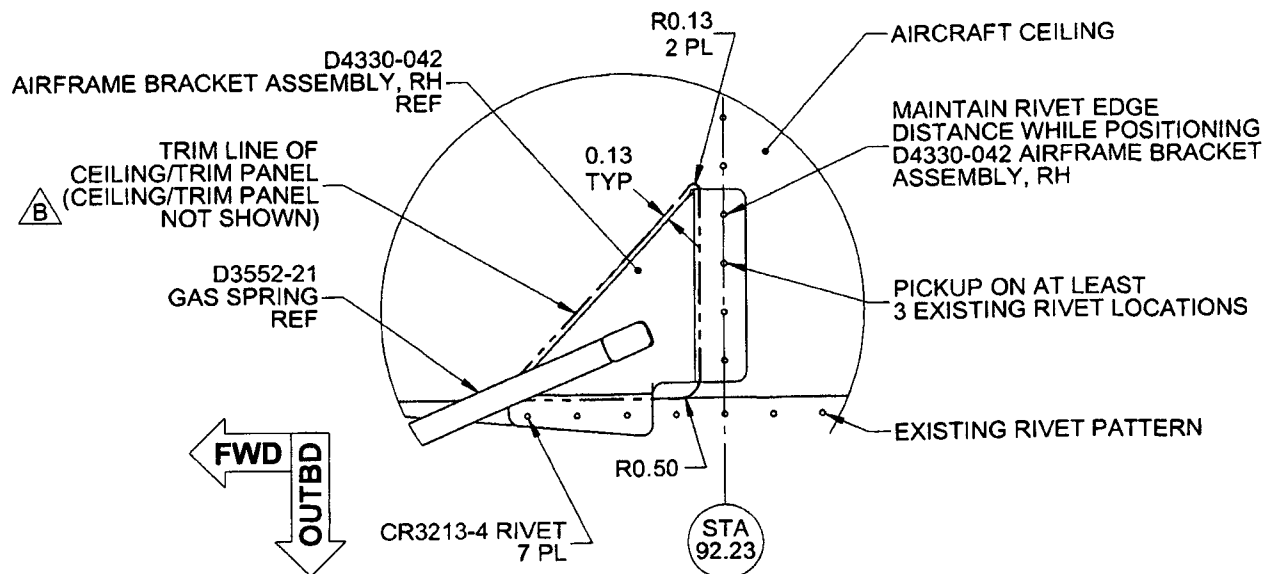


FIGURE 3: LOCATION OF D4330-042 AIRFRAME BRACKET ASSEMBLY
(RH Shown, LH Opposite)

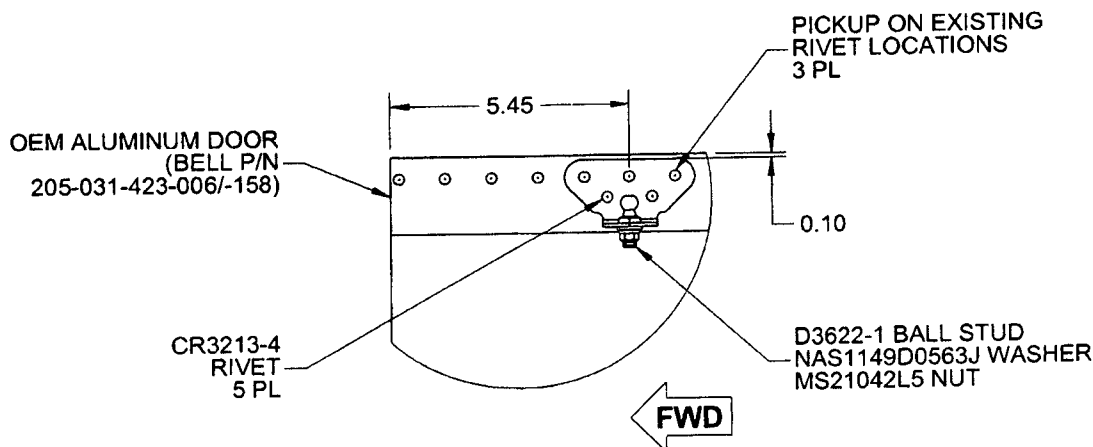


FIGURE 4: LOCATION OF D4330-3 DOOR BRACKET
(OEM ALUMINUM DOOR)
(RH Shown, LH Opposite)

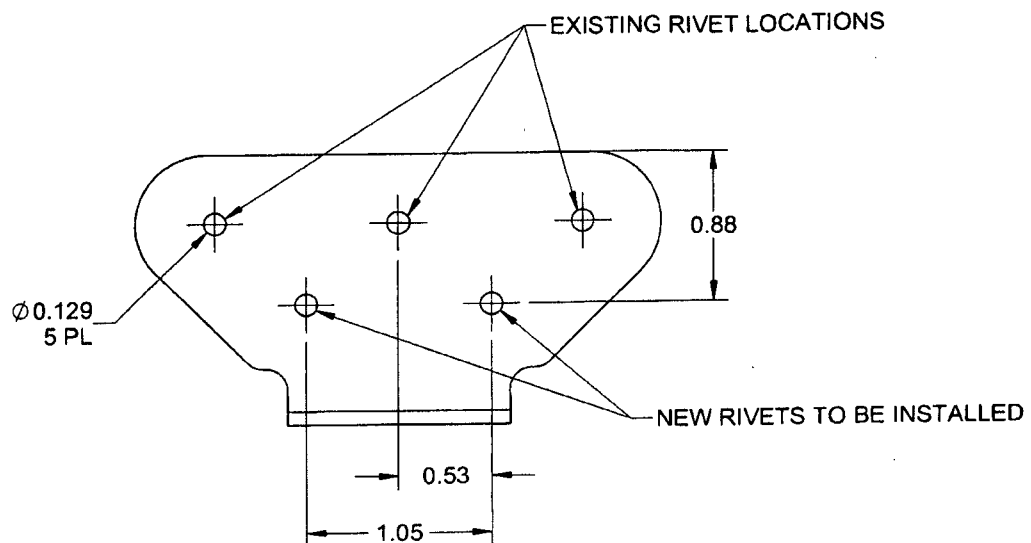
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**FIGURE 5: LOCATION OF D4330-3 DOOR BRACKET MOUNTING HOLES
(OEM ALUMINUM DOOR)**

(NOTE: MAINTAIN MINIMUM EDGE DISTANCE OF 0.25" FROM HOLE CENTER)

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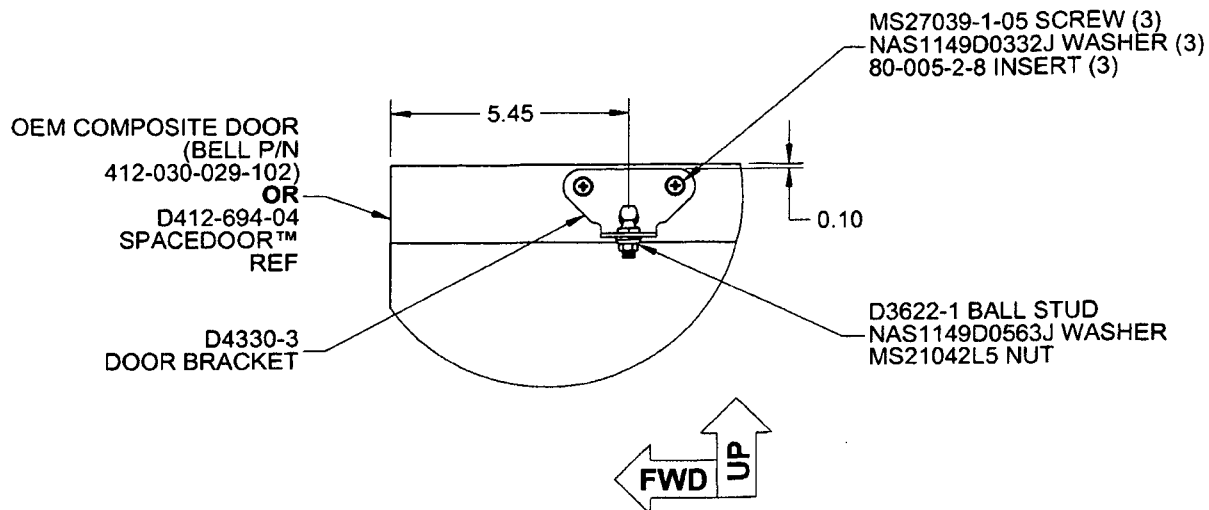


FIGURE 6: LOCATION OF D4330-3 DOOR BRACKET
(OEM COMPOSITE DOOR AND DART SPACEDOOR™)
 (RH Shown, LH Opposite)

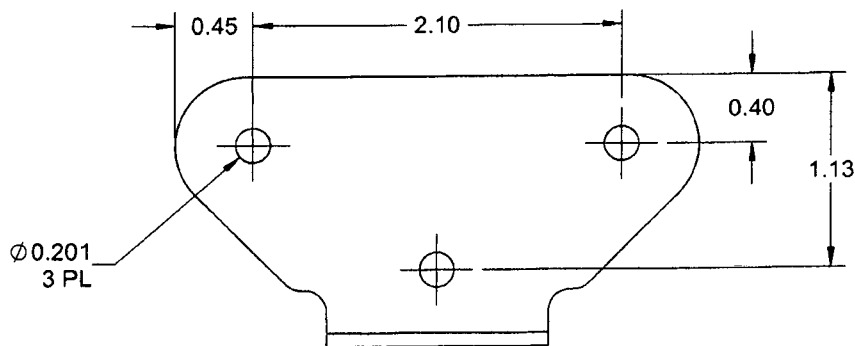


FIGURE 7: LOCATION OF D4330-3 DOOR BRACKET MOUNTING HOLES
(OEM COMPOSITE DOOR AND DART SPACEDOOR™)

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5.0 WEIGHT & BALANCE:

INSTALLATION	WEIGHT	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D412-698-041 LH (Aluminum door)	0.23 lb 0.10 kg	-43.63 in -1.11 m	-10.03 in-lb -0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-042 RH (Aluminum door)	0.23 lb 0.10 kg	43.63 in 1.11 m	10.03 in-lb 0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-043 LH (Composite door)	0.23 lb 0.10 kg	-43.63 in -1.11 m	-10.03 in-lb -0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-044 RH (Composite door)	0.23 lb 0.10 kg	43.63 in 1.11 m	10.03 in-lb 0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-043 LH (Spacedoor™)	0.23 lb 0.10 kg	-43.63 in -1.11 m	-10.03 in-lb -0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
D412-698-044 RH (Spacedoor™)	0.23 lb 0.10 kg	43.63 in 1.11 m	10.03 in-lb 0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg

6.0 PARTS LIST:

Qty -041	Qty -042	Qty -043	Qty -044	Part Number	Description
X				D412-698-041	HINGE PANEL AUTOMATIC DOOR OPENER KIT, LH (FOR OEM ALUMINUM DOOR)
	X			D412-698-042	HINGE PANEL AUTOMATIC DOOR OPENER KIT, RH (FOR OEM ALUMINUM DOOR)
		X		D412-698-043	HINGE PANEL AUTOMATIC DOOR OPENER KIT, LH (FOR OEM COMPOSITE DOOR AND DART SPACEDOOR™)
			X	D412-698-044	HINGE PANEL AUTOMATIC DOOR OPENER KIT, RH (FOR OEM COMPOSITE DOOR AND DART SPACEDOOR™)
1	1	1	1	D3552-21	GAS SPRING
1	1	1	1	D3622-1	BALL STUD
1		1		D4330-041	AIRFRAME BRACKET ASSEMBLY, LH
	1		1	D4330-042	AIRFRAME BRACKET ASSEMBLY, RH
1	1	1	1	D4330-3	DOOR BRACKET
		3	3	80-005-2-8	INSERT
1	1	1	1	MS21042L5	NUT
		3	3	MS27039-1-05	SCREW
		3	3	NAS1149D0332J	WASHER
1	1	1	1	NAS1149D0563J	WASHER

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Friday, March 11, 2016 12:57:25 PM

142734

Page 1

Item ID: D412-698-042

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Hinge Panel Automatic Door Opener RH OEM Aluminum Door

Start Date: 4/27/2016 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 5/9/2016 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: MCS Date: MAR 14 2016 Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
DSI 9548	C								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPPD412-698-042 CHG001								
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.00							
Quality Control									

MCS MAY 10 2016

MCS APR 30 2016

REFERENCE ONLY

5.0 WEIGHT & BALANCE:

INSTALLATION	WEIGHT	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
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D412-698-043 LH (Composite door)	0.23 lb 0.10 kg	-43.63 in -1.11 m	-10.03 in-lb -0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg
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D412-698-044 RH (Spacedoor™)	0.23 lb 0.10 kg	43.63 in 1.11 m	10.03 in-lb 0.11 m-kg	86.27 in 2.19 m	19.84 in-lb 0.22 m-kg

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		X		D412-698-043	HINGE PANEL AUTOMATIC DOOR OPENER KIT, LH (FOR OEM COMPOSITE DOOR AND DART SPACEDOOR™)
			X	D412-698-044	HINGE PANEL AUTOMATIC DOOR OPENER KIT, RH (FOR OEM COMPOSITE DOOR AND DART SPACEDOOR™)
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1	1	1	1	D3622-1	BALL STUD
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		3	3	80-005-2-8	INSERT
1	1	1	1	MS21042L5	NUT
		3	3	MS27039-1-05	SCREW
		3	3	NAS1149D0332J	WASHER
1	1	1	1	NAS1149D0563J	WASHER

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